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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,772	05/09/2002	Koji Hirokawa	4541-004	5739

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EXAMINER

LIN, ING HOUR

ART UNIT

PAPER NUMBER

1725

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/019,772

Applicant(s)

Hirokawa

Examiner

Ing-Hour Lin

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on May 9, 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 8 6) ☐ Other:

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Part III DETAILED ACTION

112 rejection

1. Claims 1-10 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1 and 9 are written in generally narrative and indefinite, failing to conform with current U.S. practice because there is lack of positive processing steps in the claims.

103 REJECTION

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this

Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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3. Claims 1-4 and 6-10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over US Patent No. 4,840,219 in view of US Patent No. 4,904,423.

US Patent No. '219 (col. 2, lines 19+) teaches the claimed method of manufacturing a disintegrative core having a melting point no less than 1225° F and low heat transfer coefficient with a high latent heat (low thermal conductivity) for high pressure casting a light metal such as aluminum alloy, a disintegrative core produced by the method and a method for extracting a core in a finished casting by heating the casting including the core and melting the core without distorting or melting the casting (col. 6, lines 48+), comprising: melting a mixture comprising a molten salt including halides, sodium carbonate having powdered (dispersed) therein a particulate material with 20-50 wt% with mesh size of at least 200 to a temperature of approximately 1350° F (see col. 8, lines 3+); molding and solidifying the melted mixture in a core mold preheated to about half of the melting temperature of the salt. Further, US Patent No. '219 teaches the use of other salt such as nitrates nitrites of Group Ia and group IIa metals in a lower temperature process wherein a core with lower melting point is needed and other particulate materials such as sand, glass fibers whiskers of ceramics .

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US Patent No. '219 fails to specify the use of a salt having a melting point not higher than 520° C.

However, US Patent No. '423 (col. 5 , lines 55+) teaches the use of a mixed salt including potassium nitrate for the purpose of effectively lowering the melting point of a disintegrative core to be produced in a core mold. Further, US Patent No. '423 teaches a method for extracting a core in a finished casting by heating the casting including the core for a time of 2-5 minutes and melting the core without distorting or melting the casting.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided US Patent No. '219 the use of a salt including potassium nitrate having a melting point not higher than 520° C as taught by US Patent No. '423 to effectively lower the melting point of a disintegrative core to be produced in a core mold.

4. Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over US Patent No. 4,840,219 in view of US Patent No. 4,904,423 and further in view of Nagata et al.

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US Patent No. '219 in view of US Patent No. '423 fails to teach the use of a graphite mold for molding the melted salt. However, Nagata et al (col. 14, lines 3+) teaches the use of a graphite mold for the purpose of effectively forming and removing a sintered salt from the mold.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided US Patent No. '219 in view of US Patent No. '423 the use of a graphite mold as taught by Nagata et al in order to effectively form and remove a sintered salt from the mold.


Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner I.-H. Lin whose telephone number is (703) 308-3442 or Supervisor Tom Dunn whose telephone number is (703) 308-3318.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0651.

I.-H. Lin *fld.*

August 7, 2003


M. ALEXANDRA ELVE
PRIMARY EXAMINER